CLINICAL NOTES, CASE REPORTS AND NEW INSTRUMENTS

DIABETES MELLITUS WITH MYELOGENOUS LEUKEMIA AND MILIARY TUBERCULOSIS*

CASE REPORT

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TO date there have been reported only three cases of diabetes mellitus with myelogenous leukemia, and only one case of diabetes mellitus with myelogenous leukemia and miliary tuberculosis, occurring simultaneously in the same person.

In 1892 Rebitzer [1] reported the first case of diabetes mellitus with myelogenous leukemia. Fitz,[2] in 1920, and Glaser,[3] in 1927, have each reported a similar case. In 1905 Schwartz [4] reported the first case of diabetes mellitus with myelogenous leukemia and miliary tuberculosis. My case is similar to the one reported by Schwartz.

REPORT OF CASE

J. B., male, age 42, single, and steamfitter by trade, was admitted to the Los Angeles General Hospital, March 7, 1924. Patient number 205-109. Eight months prior to his admission to the hospital he began to lose weight and to have excessive thirst and appetite. At that time a diagnosis of diabetes mellitus was made and he was treated with insulin—40 units daily. During those eight months he frequently complained of pain in the right shoulder and cough. He had lost thirty-five pounds during that time.

The patient gave a history of having had a fractured leg ten years previous to this illness. His habits were good. His family history was of no significance.

A physical examination was made March 8, 1924. It revealed a poorly developed white male who did not appear acutely ill. The eyes reacted normally; the teeth were poor; the tongue was coated; the tonsils were small and diseased. Routine examination of the chest was negative, with the exception of harsh breath sounds. There were no masses in the abdomen. The spleen and liver were not palpable, the enlargement not occurring until about three months after his admission, when the following condition was observed: The liver was four fingers below the costal margin and slightly tender. The spleen reached to the middle line and below the iliac crest. The notch was easily felt. No general adenopathy was found. At this time the diagnosis of myelogenous leukemia was made and substantiated by a number of blood counts.

X-ray of the chest was taken July 22, 1924; showed pulmonary detail rather heavy throughout the chest, especially the hilar region. Nothing distinctive of tuberculosis.

Blood Wassermann, negative.

Date	Condition of Patient
3/20/24	Severe hemorrhage due to extraction of all of patient's teeth. Lost approximately 300 cc. of blood. Fifteen cc. of horse serum injected.
6/21/24	Patient complained of pain in shoulders and knees.
8/7/24	Spleen very much enlarged.
10/30/24	Spleen decreases in size.
11/30/24	Patient feels chilly. Losing strength rapidly. Running high temperature.
12/20/24	Patient died.

Course and Treatment—Patient became sugar-free at various times under insulin treatment; patient received from fifteen to forty-five units and a diet of 2000 to 3000 calories daily. Three months after his admission he developed myelogenous leukemia, for which he was treated with benzol. The patient complained of pain in the shoulders and legs repeatedly, expectorated blood several times, but at no time were tuberculosis bacilli found in the sputum.

One month previous to death the patient began to have night sweats, chills, and fever, his temperature

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LABORATORY FINDINGS

Date	Blood Count	Blood Chemistry	Urine Analysis
3/7/24		Sugar, 333 Mg. per 100 cc.	Color, clear
		Total non-protein nitrogen, 42 Mg. per 100 cc.	Reaction, acid
			Trace of albumin
		Preformed creatinin, 1.5 Mg. per 100 cc.	Sugar, positive
			Trace of acetone
		Uric acid, 5 Mg. per 100 cc.	No pus cells
			No casts
5/14/24		Sugar, 200 Mg. per 100 cc.	
		Total non-protein nitrogen, 28 Mg. per 100 cc.	
		Preformed creatinin, 1.2 Mg. per 100 cc.	
		Uric acid, 4 Mg. per 100 cc.	
6/24/24	R. B. C., 3,900,000		
	W. B. C., 99,000		
	Myelocytes predominate		
7/22/24	R. B. C., 2,560,000		
	W. B. C., 8500		
	Myelocytes, 27 per cent		
10/17/24	W. B. C., 144,000		
11/19/24	Hb., 60 per cent		
	R. B. C., 3,000,000		
	W. B. C., 20,000		

running as high as 104 degrees. He became weaker and weaker, losing strength very rapidly during the last three weeks of the illness. He died December 20, 1924.

Autopsy Report—Autopsy performed by Dr. Lawrence Parsons. Findings: Body of apparently middle-aged white male, fairly well developed. Rigor moderate. Greenish tinge to skin over abdomen. Sclera clear. Pupils equal and regular, 4 mm. Subcutaneous abdominal and thoracic fat very small in amount. Thoracic and abdominal muscles very pale.

Abdominal cavity: Contains about one liter of clear straw fluid. Appendix apparently unaltered. Small intestine slightly distended; serosa is uniformly smooth and gray. Urinary bladder slightly distended. Spleen is enormously enlarged, extending downward 10 cm. below the left costal margin. Left lower border of liver about 7 cm. below costal margin. Right diaphragm at lower border of fourth rib. Left at fifth rib.

Left pleural cavity. No adhesions, small amount of clear straw fluid.

Right pleural cavity, same as left.

NOTE—General post-mortem changes quite marked, obscuring many of the finer points of gross pathology.

Heart: Moderately enlarged. Epicardium slightly cloudy. Right atrial cavity distended with soft chicken-fat clot. Tricuspid valve apparently unaltered. Myocardium of right ventricle soft and flabby, normal thickness and very pale in appearance. Mitral valve apparently unaltered. Myocardium of left ventricle, average thickness, 12 mm.; is very pale and flabby. Aortic valve leaflets are thin, free, and pliable. Aortic intima is uniformly smooth and light yellow. Coronary artery intima pale gray and smooth. Weight of heart, 480 grams.

Left lung: Is voluminous, weighing 1320 grams. Pleural surfaces are smooth and glistening. Lobes are slightly crepitant with a rather rubbery feel. Bronchial mucosa slightly reddened. Lymph nodes at hilus slightly enlarged and dark pigmented. Cut surface of upper lobe is slightly moist, a grayish pink, finely granular, and is diffusely and closely studded with discrete, pin-head size, grayish, semitranslucent, nodules. The lower lobe presents exactly similar picture.

Right lung: Showed changes almost identical with those of the left lung.

Spleen: Weighs 1590 grams; measures 20 by 15 by 5 centimeters. The margins are all quite rounded. The surface is fairly smooth and of a pale reddish brown color. Capsule shows very little alteration. The organ is slightly softened, but of about the usual consistency of spleen. The cut edge everts slightly. Cut surface shows a great swelling of splenic tissue, overriding all the trabeculae and appears a homogeneous, almost glistening light reddish brown color.

Liver: Is markedly enlarged, weighing 3360 grams. The capsule is thin and translucent. Liver tissue shining through appears a faintly mottled brown and light yellow color. Organ is moderately softened. The cut surface is very pale, slightly yellowish brown, and the lobular markings are indefinite, giving the appearance of a fatty metamorphosis.

Kidneys: Are normal size and shape, symmetrical, considerably softened. Capsule strips easily, leaving a smooth, pale reddish gray surface. The cut surface is very pale, slightly resembling cloudy swelling, but with a pinker color, being slightly grayish pink. No gross changes aside from the softening and the paleness observed.

Urinary bladder: Is slightly distended with turbid straw urine. Walls and mucosa are uniformly thin and show no gross alteration.

Prostate: Is apparently not enlarged.

Anatomical Summary—(1) Marked enlargement of spleen and liver. (2) Marked anemia. (3) Miliary tuberculosis of both lungs.

Probable Cause of Death—Chronic myelogenous leukemia.

Contributory Cause—Acute miliary tuberculosis of lungs.

(Unfortunately, by some error the findings of the pancreas do not appear in the record.)

COMMENT

Each report of the three cases of diabetes mellitus with myelogenous leukemia notes the fact that the diabetes mellitus preceded the myelogenous leukemia. In my case the leukemia did not appear until more than three months after the patient was admitted to the hospital. In Schwartz's case this matter is uncertain. It is also interesting to note that of the five cases of diabetes mellitus with myelogenous leukemia reported, two were complicated by miliary tuberculosis.

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REFERENCES

1. Rebitzer, A.: Ein Fall von Leukamie und Diabetes, Prag. med. Wchnschr., 17:356, 1892.

2. Fitz, Reginald: Diabetes Mellitus and Myelogenous Leukemia, J. A. M. A., 75:1331, November 13, 1920.

3. Glaser, Jerome: Diabetes Mellitus and Concomitant Leukemia, J. A. M. A., 88:1626, May 21, 1927.

4. Schwartz, E.: Ein Fall von Leukamie mit Diabetes Mellitus und Miliartuberculose, Wien. med. Wchnschr., 55:414, 1905.

Home Care of the Sick—The New York *Times* of June 1 discusses the remarks of Dr. W. C. Alvarez of the Mayo Clinic at the American Medical Association on the subjects of home diet and home nursing. It says:

"Doctor Alvarez would seem at first sight to be developing a bad case of fundamentalism when he urges the superior advantages, in a good many cases, of that old-fashioned institution, the home, against the modern scientific sanatorium. For those who can afford a first-rate sanatorium he has no suggestions. For the great many who cannot, he believes that the cure will go much better 'in the home of a devoted relative.' This is badly, sadly mid-Victorian. Are there such things as quiet homes to be found in the jazz age? Is the 'devoted relative' not utterly extinct in an age of self-expression?

"The speaker evidently believes that the species survives. He assumes that there are still mothers and wives who are willing to take trouble in a sick-room. He further assumes that affection is not necessarily incompatible with intelligence, or, at any rate, that affection plus moderate skill will balance the trained ministrations of nurses. As between a good hospital nurse who will wake an insomnia patient at 7 in the morning in order to make ready for the doctor's inspection and a maiden aunt who will let you sleep till nine, Doctor Alvarez prefers the maiden aunt."

Family physicians will say "Amen" to all this.—*New York State J. Med.*